

Work Order ID 92531

92531

Page 1

October-31-12 11:34:46 AM

Item ID: D6101-003 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Saddle Billet, 7075
 Start Date: 10/31/12 Start Qty: 60.00 *60* Cust Item ID:
 Required Date: 11/23/12 Req'd Qty: 60.00 *60* Customer:
 Reference:

Approvals: Process Plan: ML5 Date: 12-11-01 Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D6101	Rev B

100 0.00

100

Purchasing

Purchasing

PURCHASING

Memo

Issue P/O: 18309

a) Description: Alluminum billet

b) 7.875" x 6.250" x 2.00" thick

c) Tolerance on all dimensions are +0.030"/-0.000"

d) Grain direction along 7.875" length

e) Material: 7075-T7351 (QQ-A-250/12)

f) Material certification required

0.00

CL 12/11/01 60

110

Receive & Inspect for Damage & Mat'l Certs

0.00

110

Packaging

Packaging

Memo

Ensure material certification is attached

0.00

CL 12/11/10 60

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width: 25%;">Skid-tube <input type="checkbox"/></td> <td style="width: 25%;">Crosstube <input type="checkbox"/></td> <td style="width: 25%;">Water Jet <input type="checkbox"/></td> <td style="width: 25%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>						Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
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October-31-12 11:34:46 AM

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC6- Inspect dimensions to drawing Memo Ensure Material certification comply to Dwg D6101	0.00 0.00		OK 12/11/16		60	0		
130 *130* Packaging Packaging	Identify as per dwg & Stock Location: MAT42 Memo	0.00 0.00		FX 12/11/16		60	0		
140 *140* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00							12/11/19 JF

MF
12-11-16

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

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Picklist Print

October-31-12 11:34:45 AM

Page 1

Work Order ID: 92531

Parent Item: D6101-003

Parent Item Name: Saddle Billet, 7075

Start Date: 10/31/12

Required Date: 11/23/12

Start Qty: 60.00

Required Qty: 60.00

Comments: IPP A: 01.05.04New IssueC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-003P 7075-T7351 2X6.25X7.875		Purchased	No			110	Each	0.0000	1	60		10/31/12	(60)

NCR: Yes / No

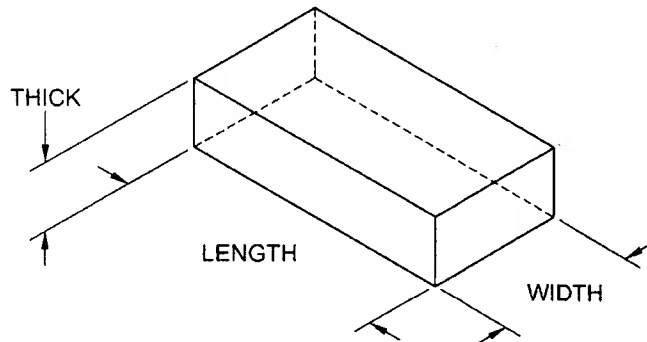
WORK ORDER NON-CONFORMANCE / UPDATE

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SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

B ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

RELEASED
09/07/15/W3

SHEET COPY
 RETURN TO
 ENGINEERING
 UNCONTROLLED COPY
 SUBJECT TO AMENDMENT
 WITHOUT NOTICE
 WORK ORDER
 NO. 9253-MCS
 (2-11-01)

B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D6101	SHEET 1 OF 1
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SADDLE BILLET, 7075	NTS
DATE	09.04.23	COPYRIGHT © 2001 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

**Castle Metals®**

A. M. Castle & Co.

BORDEREAU DE MARCHANDISES

Page 1 of 2

COPIE

No de Formulaire d'Emballage / Shipment No: 1541462

Expédié de / Ship From: A. M. Castle & Co. (Canada) Inc. MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Vendu à / Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Expédié à / Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Livré à / Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date d'expédition / Date Shipped 14-NOV-2012	F.O.B. ORIGIN	Modalités de transport / Freight Terms Prepaid	Transporteur / Carrier MANITOULIN		No du Bon de connaissance / BOL No 1541462-2		

Détails d'expédition / Shipment Details	Destination finale / Final Destination Branch - MON
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N° de commande / Order No 2520263	N° de ligne / Line No 2	N° d'article / Item No 752237.MO	Description 2.0000.PL.7075.T7351.ALUMINUM.USI.48.5000.144.5000 CUT RECTANGLE TO 6.25 IN () X 7.875 IN () SPECIFICATIONS: QA-250/12 SHIP AS SOON AS POSSIBLE				
N° de bon de commande / Purchase Order No 78309	N° de pièces / Part Number YOUR ITEM NUMBER: D6101-003	Qté commandée / Ordered Qty 60.00 PCS	Qté Facturée / Invoice Qty 60.00 PCS				
Détails / Details QQ-A/250/12 SHIP AS SOON AS POSSIBLE		<i>Handwritten signature and date: 12/11/12</i>					
N° de livraison / Delivery No :	Usine / Mill	No de coulée / Heat Number	Code mec / Mech Id	Pièces / PCS	Largeur (Pouce) / Width (IN)	Longueur (Pouce) / Length (IN)	Qté expédiée / Shipped Qty(LBS)
118148097	MATERIALS TECHNOLOGY SOLUTIONS	605568A5		1			10.1609
118148097	MATERIALS TECHNOLOG	651951		59			599.4899

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law prohibited.
 Date Printed: 14-NOV-2012 12:17:09 PM

**Castle Metals®**

A. M. Castle & Co.

BORDEREAU DE MARCHANDISES

Page 2 of 2

	Y SOLUTIONS						
<p>Ces marchandises/technologies sont sujettes aux règlements de l'Export Administration et du département d'état des États-Unis. Si elles ont été/sont exportées, elles doivent se conformer à ces règlements. Toute modification du contrat de transport contraire aux lois des États-Unis est interdite.</p> <p>These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.</p> <p>Nous certifions par la présente que le matériel couvert par cette certification est conforme aux spécifications susmentionnées et aux exigences applicables pour le matériel, y compris toute spécification faisant partie de la description. Les rapports d'essai sont archivés pour fins de consultation. Toute requête concernant du matériel défectueux sera rejetée à moins qu'elle ne soit faite par écrit à A. M. Castle & Co. dans les 60 jours suivant la livraison. Le matériel coupé sur mesure ou coupé par le client ne peut être retourné pour crédit.</p> <p>We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.</p>							
Ce matériel a été reçu et inspecté par Reviewed by Authorized Castle Metals Representative:					Date:	Name:	

0-45	0-69	UDX
5-09		SCM
IBX	PSX	
SAL	SAR	

9-89
14
DAS

2.0 IN TX (+.055) X 42.5 IN W (+.325 -
0.008) X 144.5 IN LN (+.5 - 0.0) CMT D
77551 RECTANGULAR WITH FLUSH, USE JAW
STAMPED. WMS-CC-A-250/2 15 2007 WMS-STU-
2720 15 2010 RXG WMS-40678 REV D RXG WMS-
ASTM2409 REV 10 ASTM594 REV 09 ASTM55
ASTM W X RXG WMS152 REV I PS2171 REV I
WMS GROSS SKID WGT: 4500 LB OWSA TOL +/-
40 & USI CL A 3 XN CDR 126164 REV 34
28 *** W/E 12-10-13 ***
28 12-09-2008

CERTIFIED INSPECTION REPORT

This property owned, that has been covered by this contract has been inspected with, and shall be deemed to be in accordance with the terms of the contract and shall be deemed to be in accordance with the terms of the contract and shall be deemed to be in accordance with the terms of the contract.

The last report filed by the inspector on the subject of this contract, including any recommendations, findings, and conclusions, is hereby certified to be true and correct.

Inspector's Signature: _____

Inspector's Name: _____

Inspector's Title: _____

Inspector's Address: _____

Inspector's Phone: _____

Inspector's Fax: _____

Inspector's Email: _____

Inspector's Date: _____

Inspector's Time: _____

Inspector's Location: _____

Inspector's Office: _____

Inspector's Department: _____

Inspector's Division: _____

Inspector's Section: _____

Inspector's Unit: _____

Inspector's Team: _____

Inspector's Supervisor: _____

Inspector's Manager: _____

Inspector's Director: _____

Inspector's President: _____

Inspector's Vice President: _____

Inspector's Chairman: _____

Inspector's Secretary: _____

Inspector's Treasurer: _____

Inspector's Auditor: _____

Inspector's Controller: _____

Inspector's Counselor: _____

Inspector's Advisor: _____

Inspector's Consultant: _____

Inspector's Specialist: _____

Inspector's Expert: _____

Inspector's Analyst: _____

Inspector's Researcher: _____

Inspector's Writer: _____

Inspector's Editor: _____

Inspector's Designer: _____

Inspector's Developer: _____

Inspector's Programmer: _____

Inspector's Tester: _____

Inspector's Support: _____

Inspector's Maintenance: _____

Inspector's Operations: _____

Inspector's Logistics: _____

Inspector's Finance: _____

Inspector's Marketing: _____

Inspector's Sales: _____

Inspector's Customer Service: _____

Inspector's Human Resources: _____

Inspector's Information Technology: _____

Inspector's Legal: _____

Inspector's Compliance: _____

Inspector's Risk Management: _____

Inspector's Quality Assurance: _____

Inspector's Project Management: _____

Inspector's Business Development: _____

Inspector's Strategic Planning: _____

Inspector's Organizational Development: _____

Inspector's Change Management: _____

Inspector's Performance Management: _____

Inspector's Training: _____

Inspector's Career Development: _____

Inspector's Compensation: _____

Inspector's Benefits: _____

Inspector's Safety: _____

Inspector's Health: _____

Inspector's Environment: _____

Inspector's Community: _____

Inspector's Society: _____

Inspector's Culture: _____

Inspector's Values: _____

Inspector's Beliefs: _____

Inspector's Attitudes: _____

Inspector's Behaviors: _____

Inspector's Skills: _____

Inspector's Knowledge: _____

Inspector's Abilities: _____

Inspector's Talents: _____

Inspector's Strengths: _____

Inspector's Weaknesses: _____

Inspector's Opportunities: _____

Inspector's Threats: _____

Inspector's Challenges: _____

Inspector's Goals: _____

Inspector's Objectives: _____

Inspector's Results: _____

Inspector's Impact: _____

Inspector's Legacy: _____

Inspector's Future: _____

Inspector's Hope: _____

Inspector's Faith: _____

Inspector's Love: _____

Inspector's Peace: _____

Inspector's Joy: _____

Inspector's Happiness: _____

Inspector's Well-being: _____

Inspector's Prosperity: _____

Inspector's Success: _____

Inspector's Fulfillment: _____

Inspector's Meaning: _____

Inspector's Purpose: _____

Inspector's Passion: _____

Inspector's Dedication: _____

Inspector's Commitment: _____

Inspector's Responsibility: _____

Inspector's Accountability: _____

Inspector's Integrity: _____

Inspector's Honesty: _____

Inspector's Transparency: _____

Inspector's Openness: _____

Inspector's Communication: _____

Inspector's Collaboration: _____

Inspector's Teamwork: _____

Inspector's Cooperation: _____

Inspector's Support: _____

Inspector's Assistance: _____

Inspector's Help: _____

Inspector's Aid: _____

Inspector's Service: _____

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Inspector's Teamwork: _____

Inspector's Cooperation: _____

Inspector's Support: _____

Inspector's Assistance: _____

Inspector's Help: _____</

CERTIFIED INSPECTION REPORT

DAVENPORT WORKS 4879 State Street Bendonorf, LA 52722	Ship From:	Alcoa No. Item	Customer	HADCO METAL TRADING GDA105519821
144276	2012-10-12	10006217340-4	039050	
0	7428456	03900	Contract No.	
B.L. No.	Invoice No.	Alcoa No. Item	Customer	HADCO METAL TRADING GDA105519821
144276	2012-10-12	10006217340-4	039050	
0	7428456	03900	Contract No.	
B.L. No.	Invoice No.	Alcoa No. Item	Customer	HADCO METAL TRADING GDA105519821

I am 752237. No. Po 17266 2 pages

T-401 P0001/0002 F-931

+514-695-3281

13-11-'12 10:38 FROM-Metaux Castle

CERTIFIED INSPECTION REPORT

Alcoa Inc.

DAVENPORT WORKS 4879 State Street Bettendorf, IA 52722

Ship From: RIVERDALE, IA.

We hereby certify that the material covered by this certificate has been inspected with, and has been found to meet the applicable requirements described therein, including any specifications forming a part of the description and that samples representative of the material and the corresponding limits and that the mechanical properties shown on the face of this sheet.

The last report shall not be reproduced except in full, without the written approval of the Quality Department. No alteration, addition or other change is authorized to be made to this certificate. The recording of false, fictitious, or otherwise fraudulent statements or entries on this certificate by any recipient may be punished as a felony under applicable law.

Red Woodall
Red Woodall
Director of Manufacturing Davenport Works

For the Team
For the Team
Quality Assurance Manager

1442476 Ship Date	C B.L. No.	Invoice No.	Alcoa No. Item
2012-10-12	7428446	00000	1000417340-4 DP-17340-4
P.O. No./Govt Contract No.	Customer	Alcoa Item	
039050 Lm: 4	HADC METAL TRADING 6041015519R21		

Page 2 of 2

CCR: D164164.34 -Specification Limits (Cont.)
T7351 Elec. Cond. (SC: + MIN. 38.3 PCT

Chemical Composition	SI	FE	CU	MN	MG	CR	ZN	TI	Other		
									Each	Total	
Alloy 7075	Max	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.15
Min:			1.2		2.1	0.18	5.1				
Lot: 651951	- Mechanical, Physical, Metallography, Quantometer Results										REMAIN
Empr	Dir	No ->	UTS	TYS	EL4E						
T7351	Long Transv.	Test	KSI	KSI	PCT						
		3	72.2	61.6	10.7						
			72.3	61.6	10.5						
			72.1	61.4	10.7						

T7351 Elect Cond WACS 40.1 40.1 40.1 PCT

Cast Number	Chemical - CES	SI	FE	CU	MN	MG	CR	ZN	TI
H9043096	Actuals	0.87	0.28	1.6	0.04	2.5	0.19	5.6	0.02

This material was melted in the United States or a Qualifying Country (REF DPAKS 225.872.11a); it was manufactured in the United States

DAS
14
2-89
12/11/16

Castle Metals Man

HEAT NUMBER 651951
MECHANICAL ID
ITEM CODE 752237.160
LOT NUMBER 2781996 MON
PO NUMBER 17266
RECEIPT DATE 11.13-12
SUPPLIER MTR
SPECIFICATION AMS-QQA 250/12
LCS
COMMENT
APPROVED

I have 752237.60 Po 17266 2 pages

SHIP TO: HADCO METAL TRADING CO. LLC 2811 CHARTER RD PHILADELPHIA, PA 19154		KAISER ALUMINUM Trentwood Works - Spokane, WA 99215 Phone: (800) 387-2586	
SOLD TO: HADCO METAL TRADING CO. LLC 2811 CHARTER RD PHILADELPHIA, PA 19154		CERTIFIED TEST REPORT Serial Number 4275282	
CUSTOMER PO NUMBER: 035929	WORK PACKAGE:	CUSTOMER PART NUMBER:	SHIP ROLLOUT: 102420/22
KAREN ORDER NO: 1135384	LINE ITEM: 8	SHIP DATE: 10-SEP-2012	ALLOY: 7075
WEIGHT SHIPPED: 5324 LB	QUANTITY: 3 PCS EST.	TRUCK BL. #: 2038751	CLAS: BARE
		TEMPER: T7351	PRODUCT DESCRIPTION: Sawood Plate
		GAUGE: 2.0000 IN (50.8000 MM)	DIAMETER/WIDTH: 60.600 IN (1538.7 MM)
		LENGTH: 144.500 IN (3670.3 MM)	

MHU 1618538: LOT 605588A5: 2 pieces;
 MHU 1618539: LOT 605588A5: 1 piece;

Certified Specifications

AMS 4078/RevJ
 ASTM B 209/Rev10
 BSS 7056/RevA
 DPS 4.713/RevAH
 MMS 159/RevT

AMS-QQ-A-250/12
 ASTM B 594/Rev08
 CMMP 026/RevU
 GAMP 9101/RevB
 PPS 20.04/Rev7

AMS-STD-2154/Rev98
 BAC 5439/RevH
 CSTI 008/RevD
 GSS16100/Rev0/Amd1
 PS 21211/RevL

Test Code: 4297

Test Results

Lot: 605588A5 Cast 497

Drop 07

Ingot 3

Melted in USA

(ASTM B9/B557)
 (EN 2002-1)

Tensile	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	L1 / 2 (Min:Max)	89.3 : 70.2 (478 : 484)	57.0 : 59.0 (395 : 407)	11.6 : 11.9

(ASTM E1004)
 (EN 2004-1)

Conductivity %IACS	41.0 Min	41.2 Max
(MS/M):	23.8 Min	23.9 Max

(ASTM E1261)

Chemistry:	SI	FE	CU	MN	MG	CH	ZN	TI	V	ZR	OTHER
Actual(Wt%)	0.08	0.17	1.4	0.02	2.4	0.20	5.6	0.03	0.01	0.01	TOT 0.05

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99216
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4276282

ALLOY LIMITS

	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN(wt%)	0.00	0.00	1.2	0.00	2.1	0.18	6.1	0.00	0.00	0.00	EACH	0.05
MAX(wt%)	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15
Aluminum Remainder												

TEST NOTES

TEST NOTES
Metal represented by this test report was 100% immersion ultrasonically tested from one side with 3mm dead zones top and bottom end meets the Class A and Class B requirements of all specifications referenced on this test report. No surface marking of sonic indications is performed.

Castle Metals Inc.

HEAT NUMBER 60556885
MECHANICAL ID _____
ITEM CODE 752237-Bo
LOT NUMBER 2781995 MON
PO NUMBER 17266
RECEIPT DATE 11-13-12
SUPPLIER MTR
SPECIFICATION AMS-QQ-A-250/12
LCS _____
COMMENT _____
APPROVED 7

CERTIFICATION

[illegible]

JAMES HEMENWAY, LABORATORIES SUPERVISOR